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LECTURES.

CLINICAL LECTURES ON THE PHYSIOLOGICAL PATHOLOGY OF SYPHILIS.[1]

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II. INITIATORY PERIOD OF SYPHILIS.

GENTLEMEN, — Two of the common forms of the initial lesion of syphilis were presented to you at our last session: (1) *the papule;* (2) *the abrasion.* Both were shown to be associated with a well-marked induration, distinctly traceable to a cell development and accumulation in the tissues underlying the point of syphilitic inoculation. The character of the cells composing the induration was not found to be different, microscopically, from that of normal germinal cells; but in their crowding of the tissues, and more especially of the walls of the vessels, to the extent of obstructing to a greater or less degree the processes of nutrition, this induration was shown to be unlike the results of cell accumulation from ordinary inflammatory causes. Furthermore, this accident, taking place independently of any evidence of inflammatory action, seemed to warrant a conclusion that the cells of the syphilitic induration were, in great measure, if not wholly, the product of a local proliferation, and the result of an impetus given by the disease germ of syphilis.

If we accept the statements of authorities in regard to the nature and powers of human embryonal cells, and also those of the disease germs (which are claimed to be but degraded forms of these cells), we are furnished with an explanation of this local cell proliferation, as indicated (page 218) in the previous lecture.

In the cases presented it was claimed that this localized cell accumulation and its legitimate sequences caused the characteristic induration in the first case; and also, by interference as foreign or superfluous ma-

[1] Reported by P. Brynberg Porter, M. D.

terial, caused the disturbance of nutrition which resulted in the abrasion in the second case. This view is fully supported by clinical experience. The indurated papule in Case I. is the type of a large class, in which the initial lesion of syphilis appears at varying intervals after the healing of the surface of inoculation. From its inception to its disappearance, either with or without treatment, it may be quite free from any evidence of inflammatory action, and yet it is followed by the consecutive evidences of constitutional syphilis as soon and as certainly as any other recognized form of initial lesion.

The second case, that of the *indurated abrasion*, was also typical, and showed the manner in which the open initial lesion of syphilis is formed, independently of any external influence, and simply through interference with the nutrition of the indurated tissue.

This process, which has previously been referred to as a *necrobiosis* (page 220), first recognized in the abrasion, may, if continued, result in a gradual loss of substance (chiefly confined, however, to the neoplasm), producing finally, in various degrees, the saucer-shaped, non-suppurating, indurated sore known as the typical *Hunterian chancre*.

The impression given by some authorities is that this latter is the characteristic form in which the initial lesion of syphilis is usually met. This is an error. My own experience is in full accord with that of M. Bassereau (quoted by Dr. Bumstead [1]), who states that out of one hundred and seventy cases of syphilitic erythema observed by him the initial lesion preceding the eruption appeared in the form of a *superficial erosion* in one hundred and forty-six cases.

It will, I think, become evident to you, as we proceed, that the initial lesion of syphilis has no arbitrary form, but takes its peculiar aspect from physical conditions and causes which vary greatly in different cases; dependent, when uncomplicated, upon a localized cell accumulation, free from any specific irritating property, as a basis of the local disturbance in every instance.

I am able to present to-day a typical case of the so-called Hunterian chancre, — the *saucer-shaped*, *non-suppurating*, *indurated* initial lesion of syphilis; one which will serve not only to illustrate the manner in which loss of tissue takes place in the uncomplicated initial lesion of syphilis, but also to emphasize certain other points of importance already briefly spoken of.

Case III. This young man gives an account of a single venereal exposure in the early part of October last; none during the three months previous, none since. As you see, his penis presents no external evidence of inflammatory disease. The very redundant prepuce is free from œdema and normal in color. On the left side, however, corresponding to the sulcus behind the glans, you may observe quite a pro-

[1] Third edition, page 418.

jection. To the touch it is about the size and shape of an almond, and almost as hard. The loose tissues of the prepuce move over it readily On pressure between my fingers there is no complaint of pain. When first noticed, about a month after his exposure, it was about the size of a pea. Since that time, without treatment, as he states, and without any especial discomfort to him, it has been steadily increasing until the present. During the last month or so he has observed some "lumps in his groin," and within a few days some "reddish spots" on his body.

You have already made up your minds as to the character of the disease with which this patient is *afflicted*, — not with which he is *suffering*, for he asserts that he has had no pain at any time. This leads me to remark that pain is not an essential element in syphilis; even when thoroughly characteristic, it is often absent throughout the entire course of the disease.

The induration under the prepuce, in connection with the previous history, points squarely to the site of a syphilitic inoculation.

Turning back the redundant preputial tissue, I bring into view, not a destructive suppurating ulcer, but a deep red protuberance, an outgrowth from the sulcus at the base of the glans penis. Upon the summit of this is a depression a quarter of an inch in depth, sloping on all sides to the centre. This presents a raw granular surface, of a vermilion color, covered with a moist, transparent secretion. Pressure against the sides of this mass whitens the border of the excavation, very much as the same effect is produced upon a congested palpebral conjunctiva, pressed against by the tarsal cartilage when the eyelid is turned back.

It is very evident that the open condition of this lesion has not been brought about by external influences. It has been perfectly protected by the healthy and more than ample prepuce. There is not the slightest evidence of any suppurative action, or of any rapid destruction of tissue, as in chancroid or other pus-producing sore. It is true, there is an evident loss of substance, and yet this has not been at the expense of the normal structures. I could cut down the mass for a full quarter inch, and still not encroach upon the cavernous body with which it is in close contact. Thus intimately connected with the deep tissues, it is almost immovable, and as resilient as cartilage or an epithelioma, for which a cursory examination might have easily mistaken it.

The open lesion in this case can only be explained by assuming for this loss of substance the same process of dissolution which produced the abrasion in the former case, namely, a *necrobiosis*, — molecular disintegration from *innutrition*, or, according to Biesiadecki, *anæmia of tissue*, caused by obstruction of the vessels of nutrition through the accumulation of more or less vitiated cell material.

Various conditions and influences, local as well as general or consti-

tutional, may give rise to complications in the progress of a simple necrobiosis. Thus it may be superseded by a slower or by a more actively destructive process.

Initial lesions, thus altered, have received names intended to express the nature of the complication. Thus we have the *mucoid* form of initial lesion or chancre, from its resemblance to the so-called mucous patch; also the *inflamed* or *suppurating* chancre, the *phagedenic* or *gangrenous* chancre. These modifications will receive especial consideration later, when we have the opportunity of illustrating them by presenting cases. So great an amount and degree of induration in the initial lesion of syphilis as in the present case is quite exceptional, although we shall find that it varies from that which barely stiffens the base of an initial lesion to one even greater in extent than in the instance before us.

The date at which the induration of the initial lesion of syphilis makes its appearance and the time of its continuance are alike variable. The period intervening between the inoculation and the appreciable presence of the characteristic induration has already been alluded to. This is characterized by many authors as *the period of incubation.* The idea of an incubative period, however, is necessarily connected with the claim that the virus of syphilis, once introduced, spreads from the point of inoculation by a sort of mysterious fermentation through all the channels and tissues of the body until, infection thus becoming complete, this event is announced by a reaction at the point of inoculation in the shape of an induration. Hence, in accordance with this idea, the initial lesion is, of necessity, considered the evidence of *complete constitutional infection*, and not the localized commencement of it, according to a strictly physiological view of the case. Proposing, however, to adhere as strictly as possible to the latter method, we shall be obliged to discard the term incubation in this connection as incorrect, and shall speak of this interval, greater or less, which is known to occur between the date of inoculation and the appreciable presence of the localized induration as the first stage of the *Initiatory period* of syphilis. This interval, according to the weight of clinical authority, is fixed at from fifteen to twenty days as the average. Of the two hundred and sixty-one cases observed by Sigmund the average was seventeen, ranging from four to twenty-one. Forty-five cases, reported by Fournier, averaging thirty-one days, varying from four to seventy. Rollet presents the results of artificial inoculation with the syphilitic virus in twenty-six subjects; the shortest interval before the appearance of the characteristic initial lesion was ten days, the longest thirty-nine; average, twenty-five days. Dr. Bumstead reports an interval of fifty days, Dr. Hammond one of three. The late Dr. J. C. Nott reported his own case (referred to in the previous lecture), where but twenty-four hours

elapsed between the wounding of his finger with a spicula of the bone of a syphilitic to well-pronounced axillary-gland enlargement, and this followed by a general syphilitic eruption within six weeks thereafter. Dr. R. W. Taylor reports two cases, in one of which the initial lesion made its appearance within twenty-four hours after connection, followed by characteristic induration within four days, and in six weeks by general syphilis; in the other the induration was discovered within a week after exposure, and evidences of constitutional syphilis at the end of the fifth week. *In both these cases the initial lesion was situated at the junction of the frœnum with the glans penis.*

On repeated occasions, within the last eight years, I have called the attention of the class to the presenting coincidence of a short incubation (so called) of a well marked initial lesion and its situation in the near vicinity of the frœnum. This locality (previously referred to, page 219) is notable as a point where the lymph canals come nearest to the surface, — in fact, according to Ballieff, "to a point *just* underlying the epithelium."

In the absence of any other satisfactory explanation, the conclusion appears to me inevitable that the syphilitic cell accumulation progresses in all directions, as has been proven, until an entrance of the vitiated cells into a lymphatic vessel is effected. The nidus of induration once formed, during this delay, may, under certain conditions, continue to increase, or it may remain stationary for a definite period; or, on the other hand, through the ordinary processes of tissue metamorphosis, it may soon disappear. Thus the varying interval between inoculation of syphilis and the appearance of the induration may be reasonably accounted for by the distance of the inoculated surface from the nearest lymphatic vessel, as the accumulation must necessarily progress until such vessel is reached. This distance is known to differ greatly in different localities. It is interesting to note a clinical fact, which I have often observed, namely, that indurations of the initial lesion at the frœnum and glans, posterior to the meatus, are uniformly small in extent. In the prepuce, on the contrary, where, according to the researches of Dr. Isidor Neumann,[1] the lymphatics are much more deeply located, we find indurations more extensive. These vessels are represented as still more deeply seated in the base and body of the glans. These are also the known localities of occasional extensive indurations, while in the integument of the penis, where the lymphatic distribution is very superficial, forming loops near the apex of each papilla cutis, we have the most common occurrence of that thin induration which is termed the *parchment induration.*

Again, on the integument also, we meet most frequently the initial

[1] Zur Kenntniss der Lymphgefässe der Haut des Menschen und der Saugethiere, Wien, 1873, Taf. viii

lesion as a small indurated papule, much resembling the indurated papule of a later syphilitic manifestation (secondary papular eruption), which, as it will hereafter be shown, is always associated with the lymph vessel of a papilla cutis. It is unfortunate that, in the large number of cases reported by authors to illustrate variations in the so-called period of incubation, the locality of the lesion should in no case have been reported. For, while various constitutional influences *may* be potent to cause variations in the interval between inoculation and induration, as well as in the amount and quality of the induration, the relative position of the surface of inoculation in regard to the nearest lymph canal, through which the vitiated cells are known to be carried directly to the nearest lymphatic gland, must be accepted as an important element in determining variations in date of appearance, as well as quality and amount of induration.

The continuance of the induration varies as much in different individuals as its amount. In cases like the one now under consideration, where it is extensive and characteristic, it may remain more or less salient for months. The same is also true of the indurated papule, even when no larger than a pea. The development of the newly deposited cells into connective tissue fibres, to a greater or less extent (as claimed by Biesiadecki), may be reasonably held responsible for the exceeding density and prolonged duration in such cases.

In his description of the progress of his case, you will recall the statement of our patient that about a month since he "noticed some lumps" in his groins. With the remembrance of examinations in previous cases, this does not surprise us. The inguinal glands in each of these were found enlarged and indurated, movable, painless, *evidently not the subject of inflammatory action.* Here, also, as I press upon the "lumps" referred to, I find them to be enlarged and indurated inguinal glands, painless also, and movable. There are no appreciable attachments to the surrounding tissues, although the patient has been conscious of their presence for more than a month, and we can believe that they have been enlarged for a much longer time. No pain; not the least evidence of inflammatory action any more than in the initial lesion. If we remove and examine a gland so enlarged and associated with the characteristic initial lesion of syphilis, we shall find it packed with cells similar to those we find in the indurated tissue of the initial lesion.

In Case II. you will remember that I directed attention to an enlarged lymphatic vessel, evidently connecting the indurated initial lesion with a similarly enlarged lymphatic gland. This, though not appreciable in all cases, may be recognized with sufficient frequency and certainty to indicate, beyond doubt, the channels through which the infective process is transmitted to the glands thus connected with the initial lesion.

It has been noticed that all lymphatic glands adjacent to a syphilitic initial lesion are not the subject of abnormal cell accumulation; only those in direct connection by lymph canals are involved. Those in the inguinal region corresponding to the locality of the initial lesion are usually the first to enlarge, yet the reverse is sometimes the case. This may be readily explained by the frequent crossings of lymphatic vessels on the *dorsum penis*. In the present instance there appear to be nearly a dozen enlarged and indurated glands, in either groin, varying in size from one half to one eighth inch in diameter. Such glands never suppurate except under prolonged external irritation in connection with a highly scrofulous diathesis. This is still another proof of the non-inflammatory nature of syphilitic cell accumulations. It would be very natural for you, at this point, to ask for an explanation of the causes which determine the direction of the infective processes of syphilis in the line of the lymphatic channels. For this we must revert to the nature of the infection, as claimed, through an incorporation of the degraded germinal cell (disease germ) into the substance of the white blood cell, *and its proliferation with this cell.* Stimulated in this manner to unhealthy activity, cell proliferation would appear to be capable of producing the abnormal cell accumulations which we have thus far found characteristic of the progress of the syphilitic infection; and, beside this, we have no other way of accounting for them. Why it does not combine with and infect the red blood corpuscle, and at once enter the general blood current, would seem to be accounted for by the fact (claimed by Beale, especially) that the red corpuscle is *formed material*, and hence the disease germ cannot combine with and become incorporated into its substance, nor subsequently undergo the rapid proliferation which is necessary to the generation and accumulation of the vitiated cells, *the essential product of syphilitic action.* This is, however, fully within the province and power of the white blood corpuscle, as already described to you (page 217) in a previous lecture. Again, the lymphatic vessels are the *natural channels* of the embryonal or white blood cells. Every surface of abrasion or inoculation may be said to be in direct communication with a lymphatic gland, not with an open blood-vessel.

The current of the fluids which everywhere permeate the tissues is not in the direction of the blood-vessels, but of the lymphatics, and thus we can understand why the progress of the syphilitic infection physiologically considered should be just as we have found it clinically, — not penetrating, pervading the tissues instantaneously, at the moment of inoculation and in defiance of all natural laws, but progressing slowly, certainly, physiologically, from the surface of inoculation through the contiguous and pervious lymph spaces into the lymph channel nearest,

and thence directly into the substance of the lymphatic gland with which it has direct connection.

Thus far, then, as you have seen, we have syphilis as a purely local disease. No evidence of it has been observed in the blood up to the time of its appearance in the glands. I challenge history to produce a single proven instance where syphilis has been demonstrated in the blood *before* the enlargement of the lymphatic glands in direct connection with the surface of inoculation, *or for several weeks after*. For the infective process, after reaching the gland thus in connection, in order to pass through it, must follow the intricate windings of the lymph current, through the gland substance, more or less obstructed, by the same or similar influences which delayed the entrance of the infected cells into the lymph canal nearest the point of inoculation.

It is a well-recognized clinical fact that not a single evidence of constitutional syphilis is ever present until after a period of *at least twenty-five days* after the occurrence of the induration and local gland enlargement. The average, as stated by numerous accepted authorities, is *over forty days*. If it is present at any point other than that included between the initial lesion and the glands in immediate connection, we seek in vain for the evidence of it. Such evidence cannot be produced from any reliable clinical records of the disease, nor from the results of any reported experimental inoculations.

This period, during which the diseased elements are making their toilsome way through the channels of the lymphatic glands (citadels established by nature to protect the general blood current from noxious invasion), has been termed *a second incubation.*

You have seen what the first incubation has been proven, namely, a *gradual cell growth and accumulation.* In the same way is the second apparent interval an incubation. When the gland channels have been fully traversed by the vitiated cells, and they, still following the lymph current through, possibly, still other intervening glands, have been carried into the *receptaculum chyli*, and from thence ushered through the subclavian veins into the general blood current, then, *and not until then*, may it be reasonably claimed that the disease has lost its local character, and has become in a strict sense a constitutional disease.

The period of purely local action, namely, that which precedes the entrance of the infective syphilitic material into the general blood current, may, it appears to me, be appropriately termed the Initiatory Period of Syphilis.

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WOUNDS OF THE KNEE-JOINT.

BY ALFRED HOSMER, M. D.

"Wounds made into the cavities of large joints are the most dangerous of those affecting the body almost in any instance." — ASTLEY COOPER, 1818.

"When a large joint is opened, even by a small incised or punctured wound, there is great danger lest such extensive local mischief and constitutional disturbance ensue as to lead to the destruction of the articulation, with loss of the patient's life." — ERICHSEN, 1857.

"The opening of the synovial sac, with escape of synovia, even if the wound be not large, is always a severe injury, often interfering with the function of the joint, and not unfrequently dangerous to life." — BILLROTH, 1877.

CASE I. A farmer's son, twelve years old, while chopping wood, made a button-hole in the synovial membrane of the left knee, outside of and a little below the patella. The opening easily admitted the tip of the forefinger. The wound, a clean one, was closed with sutures, a compress moistened with cold water was applied, and absolute rest was enjoined. No trouble of any importance, local or general, followed; within a reasonable time perfect recovery took place. The boy now has no reason to regret the carelessness with which he inflicted upon himself the wound.

CASE II. A carpenter, of good constitution and habits, in the fourth decade of life, while at work one summer's afternoon upon the roof of a building, by the careless use of a shingling hatchet opened one of his knee-joints. He knew nothing of surgical traditions, and his courageous philosophy enabled him to look with contempt upon any casualty incident to his trade, which apparently left only an incision of moderate length in the skin. He completed the work of the day as if nothing had happened. But before going to bed there occurred to him the propriety of having some professional assistance.

The clothing, which was thick and heavy, was extensively saturated with synovial fluid. The hæmorrhage had been slight, although the wound was quite a long one. The plan of treatment proposed will readily suggest itself. The patient cheerfully accepted everything advised, excepting the injunction to keep still. The second day afterward he returned to his labor, in spite of my protest, and lost no more time. Convalescence was uninterrupted, and the recovery of the knee was complete.

CASE III. A boy, twelve years old, while playing with a hatchet, inflicted a short wound over the internal condyle of the right knee. He at once walked a large fraction of a mile in search of his mother. She returned with him, and resorted to the methods which are in accord with the principles of domestic medicine. I was not called until the early part of the second week. There were then well-marked constitutional symptoms. The limb was much swollen from the groin to the

toes, and was hot and tender. The joint was distended with a well-marked effusion, and was also the seat of considerable pain. Being satisfied that the original wound had penetrated the cavity of the knee, I at once reopened and enlarged it, and also made a second opening on the opposite side over the external condyle. A sero-purulent fluid escaped. This was the starting-point of a convalescence which advanced in a most satisfactory way, and terminated in complete recovery, leaving the joint just as good as ever.

In this case we undoubtedly had what surgical writers have accepted as a condition of safety, namely, the immediate closing by adhesion of the aperture in the synovial membrane; yet that process did not avert an inflammatory action. When the patient came to my hands his danger lay in the fact that he did not have an incision that penetrated into the cavity of his knee.

Case IV. A man somewhat over thirty years of age came several miles to consult me at my office. His antecedents in respect of sanitary conditions and morbid processes were not of the best. A few hours before he had penetrated his right knee-joint with the dull blade of an old pocket-knife, and a rough-looking instrument it was. He had seen no reason for discontinuing the use of the limb, and acted accordingly. The joint was somewhat swollen. By forcible flexion he could eject from the wound, in a stream of considerable size and force, synovial fluid, which in its quantity could be measured in teaspoonfuls. A silver wire suture was passed, and the usual directions and precautions were given. He thought that he could not release his knee from its accustomed work, and certainly did not very long. I saw the case but once. I am assured by a brother of the patient that no trouble followed the accident.

Case V. A young man, not of a healthy family, while working at his trade wounded himself with a chisel. Two and a half centimetres above the upper margin of the patella was a transverse cut four centimetres long externally, and in its deep portion making an opening somewhat shorter into the knee-joint. The wound was closed with metallic sutures, and rest in bed faithfully maintained. There followed a moderate effusion into the joint, but this was not of many days' duration. The only constitutional disturbance was, on the third day, an elevation of the temperature to 100° F. The amount of discomfort referred to the knee was trifling, and everything proceeded in a most satisfactory manner.

Case VI. To the foregoing series I might add one taken from the veterinary branch of our art. A colt, three years old, when running loose in an inclosure, was suddenly found to be lame. Marked swelling of one knee, as it is called, attracted attention, and led to the discovery of a puncture, which entered the cavity of the joint. No particular trouble ensued; the limb was very soon as good as ever.

These cases occurred in a country practice, and make up the sum of the writer's experience in injuries of this kind. He has never happened to meet an instance of disastrous termination. Some of the cases here reported were treated before the value of carbolic assistance was generally known; before the precepts of Lister had explained and enforced the importance of the antiseptic idea, and had defined for it an efficient method of application. No one of them was managed upon a strictly antiseptic plan, but they all did well simply because there did not occur in them that bad quality and dangerous tendency with which such wounds are commonly accredited, rightly or wrongly. The results obtained are in striking contrast with the doctrines of those authorities whom I have quoted.

RECENT PROGRESS IN OPHTHALMOLOGY.

BY O. F. WADSWORTH, M. D.

Eserine and Atropine in Glaucoma. — The experience of various oculists in the use of eserine, as brought out in the debate on glaucoma at the meeting of the Heidelberg society[1] is of interest. Schweigger warned against its too free use, since it might easily excite iritis. Laqueur had found it effective in cutting short light attacks of acute glaucoma, or in the prodromal attacks. Its efficacy in more severe attacks appeared doubtful, but it is of use in producing, by contraction of the pupil, a condition more favorable for the performance of iridectomy. In glaucoma simplex its action is not to be relied on. The opinion that it causes decrease of tension in the anterior chamber through pressure backward by the iris,[2] or that which refers this effect to the freeing of adhesions at the periphery of the iris,[2] is negatived by the fact that, in certain cases, the tension is diminished, the arterial pulse ceases, before the pupil begins to contract. Follicular catarrh of the conjunctiva is sometimes excited by prolonged use of eserine, of like character to that occasionally produced by atropine. Cohn believed it of value in enabling the postponement of operation for a day or two in acute cases; in a chronic case, where there were reasons to prevent operation, he had employed it for a year, but the field had continued to narrow, the vision to decrease. Pfluger had found by the tonometer, in a case of glaucoma simplex with intermittent inflammation, tension increased twenty minutes after the use of eserine. Knapp, in one case of acute glaucoma, had relieved the attack by eserine, and had no return at the end of five months; in other acute cases the good effect was only temporary. In subacute glaucoma the effect was uncertain, in chronic either negative or positively harmful; in one such case it brought on

[1] Berichte ueber die 11te Versammlung der ophthal. Ges., Heidelberg, 1878.

[2] JOURNAL, vol. xcvi., pages 528, 529.

an acute attack. He had also observed its tendency to produce iritis, and used it therefore with much caution, or not at all, as a preparation for iridectomy. He had been obliged to employ atropine soon after iridectomy, to release adhesions which had been caused by eserine.

With reference to the reputed influence of atropine to excite an acute attack in eyes predisposed to glaucoma, Schweigger stated that he had seen cases which might bear this interpretation, but regarded them only as coincidences. He had employed atropine experimentally to determine this question both in glaucoma simplex and between the attacks of inflammatory glaucoma, but had never succeeded in so causing the attack. In one such case atropine had been ordered over night, and in the morning the attack came on, but inquiry developed the fact that the atropine ordered had not been instilled. Förster and Dor believed atropine did arouse a predisposed eye to inflammation.

Thrombosis of the Vena Centralis of the Opticus. — Spontaneous thrombosis of the vena centralis Michel [1] believes to present well-defined and characteristic ophthalmoscopic appearances; in the course of three years he has observed seven cases, — five men, two women; in one case only were both eyes involved, but at an interval of about a year. The patients were generally between sixty and seventy years of age; the youngest was fifty-one. All presented a high degree of sclerosis of the peripheral arteries, and in several there was some hypertrophy of the right or left ventricle. The onset of the disease bears much resemblance to that of embolism of the central artery; it is always sudden, without prodromal symptoms and unaccompanied by subjective sensations; generally the loss of sight is first noticed on waking in the morning, but vision is never totally extinguished, and improves after the first, though it may be only temporarily. Michel distinguishes three grades of intensity of the affection, according as the thrombosis of the central vein is complete, incomplete, or slight. In the first the opticus and surrounding retina are seen diffusely overspread with blood, and the outline of the disc is wholly effaced, but there is no change of level. Within this diffuse bloody area, which extends around the opticus to a breadth of one to one and a half diameters of the disc, denser stripes of hæmorrhage are seen, corresponding to the distribution of the nerve fibres. Farther from the disc are numerous extravasations of the most varied form, size, and thickness. Upon the bloody area itself no vessels are visible; beyond it the arteries are very narrow; the veins are greatly enlarged, very winding, and quite dark in color, are here and there hidden by hæmorrhages, again bordered by a whitish stripe, or with their blood column narrowed by a whitish infiltration of the retina along their sides. In the macula there is seen early a whitish discoloration; a red spot in its centre appears to be a true hæmorrhage.

[1] Archiv für Ophthalmologie, xxiv. 2.

In the second grade the outlines of the disc are hidden by broad, striped hæmorrhages, which extend in all directions, but chiefly toward the macula. The veins are large, dark, and winding, the arteries faintly seen as thin threads; both can, however, be followed to their exit. The further changes resemble in diminished degree those of the first grade.

In the third grade there are few striated hæmorrhages at the edge of the disc, or denser ones covering a vein, but there is a remarkable disproportion between the size of the arteries and veins; the latter are larger, more tortuous, and darker than ever in choked disc. No change is found in the macula. That the thrombus is here in the central vein rather than in some of its branches is indicated by the nearly uniform venous dilatation. The result may be permanent complete closure of the vein, partial closure, or complete removal of the thrombus. In Michel's cases it seemed possible to assume the latter eventuality only when the thrombus had been small. With complete closure the hæmorrhages are at first partially absorbed, the opticus becomes more visible, and the arteries and veins may be followed farther toward the disc, but soon and repeatedly new extravasations occur, with farther depression of vision. The retina becomes more opaque, the vitreous turbid, whitish folds or threads are seen stretching across the fundus, and vision is almost wholly extinguished.

In the second grade, also, fresh hæmorrhages follow a fuller condition of the arteries, with renewed visual disturbance; but gradually the hæmorrhages are in part absorbed, in part take on a yellowish-white color; the space between opticus and macula is dotted with yellowish-white points, the macula region grayish-white, the disc less indistinct. The veins remain large, dark, and tortuous, and disappear suddenly here and there beneath elevations of the retina. The vitreous becomes hazy. Still, vision improved in one such case from counting fingers at 6′ to V $\frac{1}{5}$.

In the third grade the hæmorrhages disappear; the outline of the disc becomes sharp, but it assumes a whitish tint, as of atrophy, and careful examination yet reveals a disproportion in size between arteries and veins, while vision remains moderately impaired.

In one case, presenting clinically a type of the first grade, there was found an organized thrombus filling the vena centralis shortly before its emergence from the opticus into the orbit, hæmorrhages and results of hæmorrhages in the retina, atrophy of the nerve fibres and ganglion cells, proliferation of the radial fibres of the retina, development of blood-vessels and membranes in the vitreous. Considering the character of the changes in the circulatory system, that the condition of the arterial walls was such as to offer obstruction to the free flow of blood, it may properly be assumed that the thrombosis was spontaneous, the clot forming where a bend in the vein caused a slightly increased im-

pediment to the current, that is, at its exit from the opticus into the orbit.

In striking contrast to the cases described by Michel are two cases of thrombosis of the vena centralis reported by Angelucci.[1] The first patient, a man of twenty-three years, noticed while at work blindness of his left eye. Two months later he entered the hospital, when insufficience of the aortic, and insufficience and stenosis of the mitral valves were discovered. Examination of the blind eye showed the media clear, the disc whitish and somewhat irregular in outline, the arteries narrow, the veins moderately enlarged and winding; no hæmorrhages. In the other eye vision was good; there was slight enlargement of the veins, and one small hæmorrhage on the disc No further changes took place till death, three weeks later. The microscope discovered in the blind eye evidence of atrophy of disc and opticus; no trace of hæmorrhage in the retina. There was marked periphlebitis of the vena centralis, and a thrombus close behind the lamina cribrosa completely closed it. The central artery was compressed at this point, as it seemed, rather by the thickening of the wall of the vein than by the thrombus. In the right eye was also phlebitis and periphlebitis of the vena centralis, but nowhere so far advanced as in the left, nowhere involving the whole circumference of the vessel. The other organs presented the pathological changes usual with valvular disease of the heart. In the kidneys and in patches of softening in the cerebral hemispheres phlebitis and endarteritis of the small vessels.

The second case was very similar. A woman of twenty-four years, with acute rheumatism and insufficience of the mitral valve, lost the sight of the left eye during the night. Examination showed total blindness of this eye, the arteries narrow, and in places apparently empty. But on the next day the irregularity in the blood column had disappeared; the disc was somewhat veiled. Nothing else abnormal was seen. Death two months later. Here again was thrombus completely plugging the vena centralis, periphlebitis of the vein, and compression of the central artery.

In both these cases the patients were young, the occurrence of blindness sudden and complete. Though there was disturbance of the circulation from the heart disease, no atheroma or pronounced sclerosis of the arteries existed. The demonstration in the first case of periphlebitis also of the vein in the right eye, without thrombus, and in the second case of periphlebitis of other parts of the vein than that which was plugged, is strong evidence that the thrombosis was secondary to the affection of the wall of the vein. Whether the absence of extensive extravasations, such as Michel's cases presented, was owing to the different method of production of the thrombosis *per se*, to the possibly

[1] Monatsblätter für Augenheilkunde, October, 1878.

simultaneous compression of the arteria centralis, or to the lack of pathological changes in the arteries, is not easily to be decided.

Diagnosis of Intra-Ocular Tumor by Probing. — Fraenkel [1] observed in the eye of a girl of sixteen an elevation of the retina, which extended in the form of a grayish fold from the optic disc downward and inward, till its anterior end was lost to view. On each side of this elevation was a shallow separation of the retina. The central fold near the disc was little wider than the latter, but gradually doubled in width as it ran forward; it showed no movement. The media were clear; central vision = ^{1}; a defect in the field corresponding to the separation. During six weeks' observation the only change consisted in an increase of prominence of the fold. To decide if a solid growth were present, a cataract needle was passed into the eye six mm. to the outer side of the cornea, and directed by help of the ophthalmoscope through the vitreous toward the fold. Sudden clouding of the cornea, probably produced by pressure or dragging, caused failure of the first attempt, but a second, two weeks later, was successful, and the operator could satisfy himself, both by touch and sight, that the grayish ridge offered firm resistance to the needle, and could even feel along one side of the growth. The eye was enucleated, and a gliomatous development between the layers of the retina found which reached from the disc to the ora serrata in the form of a narrow band, widening toward its anterior extremity, and projecting one and one half to two mm. into the vitreous.

The Optical Constants of the Eye. — Reuss [2] made careful measurements of the curves of the cornea and lens and the distance of the surfaces of the lens from the cornea in twenty-one eyes. From the results of these measurements and the calculations based on them he draws the following deductions: —

(1.) The dioptric apparatus of two eyes of the same refraction may be very different, whether the eyes be emmetropic or in high degree ametropic.

(2.) This difference does not depend only upon a difference in the curve of the cornea, but equally upon varying refractive power in the lens.

(3.) The depth of the anterior chamber is in general less than previous measurements have shown; it is not always of the same depth in emmetropes, and in myopes bears no direct relation to the amount of the myopia.

(4.) The distance of the posterior pole of the lens from the summit of the cornea is less than has been assumed.

(5.) Emmetropic eyes have a longer axis, a shallower anterior cham-

[1] Centralblatt für practische Augenheilkunde, December, 1878.

[2] Archiv für Ophthalmologie, xxiii. 4.

ber, and a lens of much greater focal distance than hitherto supposed. The newer values of the schematic eye of Listing-Helmholtz are therefore still too small.

(6.) In myopic eyes the radius of the anterior surface of the lens is, as a rule, much greater than in emmetropia, and the same is in general true as to the posterior surface of the lens. In correspondence with this the focal distance of the lens is almost without exception greater in myopes than in emmetropes. Among the eyes measured was none in which an excess of focal power in the lens was the cause of myopia.

(7.) The thickness of the lens in myopes is, with few exceptions, less than in emmetropes.

(8.) The principal focal distances of the eye average to be greater in myopes.

(9.) In most myopes both nodal points lie behind the lens, or at least the anterior nodal point lies very near the posterior surface of the lens.

Horstmann[1] measured the depth of the anterior chamber in forty-one eyes by means of an instrument contrived by Donders. He found the depth to be less than that given by nearly all previous observers, but his results agreed very nearly with those of Reuss. The depth varied in eyes of the same refraction, while the average depth was greatest in myopic, least in hypermetropic eyes.

PROCEEDINGS OF THE NEW YORK COUNTY MEDICAL SOCIETY.

March 24th. *Laryngeal Phthisis.* — Dr. Frank H. Bosworth read a paper on Laryngeal Phthisis, in which he maintained the non-tubercular character of the affection, but regarded impaired vitality as the most important element in its causation. He considered the appearances always noted in the first of its three stages as pathognomonic of the disorder, and believed that it was curable in the majority of instances when recognized sufficiently early. Even when in the stage of ulceration he thought many cases could be cured, although chronic laryngeal catarrh was apt to remain. He divided the treatment into four procedures: (1.) Thorough cleansing of the parts, preparatory to other measures. (2.) The application of mild astringents, alterants, etc. (3.) Anodyne applications to relieve the pain and irritation sometimes caused by the latter. (4.) The use of iodoform as a specific in the ulcerative stage. Dr. Bosworth thought the applications could be most satisfactorily made by means the Sass spray, and occasionally in the form of powder by the insufflator. The steam atomizer he condemned in this as in all other chronic affections of the throat. — Dr. Flint stated that he had always been accustomed to regard the prognosis as bad in laryngeal phthisis, and Dr. Lincoln said that although a certain proportion of cases were curable under appropriate treatment, he

[1] Bericht der ophthalmologischen Gesellschaft, Heidelberg, 1878.

could not agree with Dr. Bosworth in his statement that this was the case in a majority of instances. — Drs. Beverly Robinson and Andrew H. Smith spoke in favor of tracheotomy, which the author of the paper had advocated in cases where the other measures recommended failed to be of service; but the latter urged great caution in the procedure, as he believed that fatal catarrhal pneumonia was more or less likely to occur after the operation. After expressions of opinion by two or three other members, Dr. Bosworth brought the discussion to a close, and in the course of his remarks mentioned incidentally that although the most of his patients had been cured of laryngeal phthisis, nearly all of them had subsequently died of pulmonary disease.

Abuse of Medical Charities. — Dr. F. R. Sturgis read a paper on The Responsibility of the Medical Profession for the Abuses of Medical Charities, which had been presented at the recent meeting of the State Medical Society, and was by it referred to the county societies for consideration. In consequence of the lateness of the hour, the discussion of this paper was made the order of a special meeting of the society to be held April 14th.

Metric System. — The same evening was adopted the report of the committee on the metric system, whose recommendations were embodied in a series of resolutions to the effect that the system shall henceforth be used in the minutes of this society and in all the papers published under its authority; that the society request the medical boards of the New York hospitals and dispensaries to adopt the system in prescribing; that the faculties of the medical colleges in the city be also requested to order its adoption in their didactic and clinical departments; and that the Medical Society of Kings County (Brooklyn) be invited to coöperate with it in the means of insuring rapid and safe transition from the old to the new system of weights and measures.

FERRIER ON THE LOCALIZATION OF CEREBRAL DISEASE.[1]

The name of Dr. Ferrier has already been long known to the medical public as the author of The Functions of the Brain, and these lectures, which appeared first in the English journals a year ago, were looked for with much interest, as promising to give the last clinical word about a subject on which the writer, by his experimental researches, had earned a right to speak with authority.

There is no reason to be disappointed as to the manner in which this expectation has been met. The work throughout deserves the highest praise. The reasoning is clear and fair, and the materials have evidently been collected with industry and discrimination. The turning-point of the book is of course an attempt to account, on physiological principles, for the symptoms observed clinically in cases of destruction or irritation of the so-called "motor" and "sensory" centres, recently discovered in the convolutions adjacent to the fissure of Rolando, and elsewhere; in other words, to establish the *cortical paralyses*, etc., on a firm basis.

[1] *The Localization of Cerebral Disease.* (Soulstonian Lectures for 1878.) By David Ferrier, M. D., F. R. S., etc. New York: G. P. Putnam's Sons. 1879. Pp. 142.

It is highly satisfactory, in view of the heterogeneous mass of apparently contradictory testimony with which Dr. Brown-Séquard has identified his name of late, to hear from Dr. Ferrier (page 40): "It is not maintained, however, that in all cases of purely cortical paralysis anatomical lesions are demonstrable in these centres; but I am unable, after much investigation, to find any satisfactory evidence of a destructive lesion here, not associated with motor paralysis." The famous "crow-bar" case has sometimes been brought forward as a piece of adverse evidence of this kind, but it is probable that the convolutions referred to in reality escaped injury. For the analysis of the evidence showing the probable position in man of the special "motor centres," we must refer the reader to the original essay. If the conclusions based thereon are justified, as is now almost universally believed, we may have in man complete paralysis either involving one entire half of the body, or limited to some of the movements of one member, from disease or injury confined to the cortex cerebri in the motor region referred to, and analogous disturbances of the special senses, from similar lesions in the more posterior portions of the cortex. Indeed, the hemiplegias of cortical origin are hardly, when fully developed, to be distinguished from those due to lesions of the deeper-lying parts.

The existence of other diseases (meningitis, etc.), and the mode of onset of the attack may help to a diagnosis. Thus we read (page 98), "Hemiplegia, complete from the first and permanent, is not, however, the most common type of paralysis depending on lesion of the cortex or subjacent medullary fibres. More frequently, paralysis of cortical origin is . . . a succession of dissociated paralyses or monoplegiæ. In cortical affections we frequently find a hemiplegia, at first complete, resolving itself into a monoplegia, or a monoplegia becoming a hemiplegia by progressive advance of the disease to other centres. . . . Monoplegia is very often associated with monospasm, or early rigidity of the paralyzed limb. . . . Cortical paralysis is frequently erratic and transitory, more especially in connection with superficial or meningo-encephalitis, — appearing and then vanishing, first on one side and then on the other." "According as the lesion is superficial, or invading the whole depth of the cortex and subjacent medulla, we get transitory paralysis, or a paralysis which remains permanent and is followed by descending sclerosis and late rigidity," etc.

Additional evidence is brought to show that *epilepsy* (a name which, as Hughlings Jackson long ago pointed out, should be taken to indicate a *pathological condition* in which ganglionic matter anywhere may be found, and not the lesion of a certain organ, as the medulla oblongata) is often due to irritative lesions in the motor area of the cortex.

No extended attempt is made to analyze the functions of the so-called "centres" from the psychological stand-point, though what is said seems to us sound and interesting. We object, however, to the view, which is sanctioned not directly, but by implication, as to the significance of the movements induced by electrical excitation of the brain.

It is claimed that by this mode of experimentation we can study the localization of functions in the cortex cerebri, but it is plain that unless it is assumed that these movements are such as are characteristic of the conscious,

volitional life of the animal, they can give us only a very limited information as to what are generally believed to be the most important of the cortical functions.

It will be rejoined that the information given by the electrical experiments is both supplemented and corroborated by the testimony of the results (localized paralyses) of destructive lesions of the cortex. But even if this were entirely true (and it must be confessed that the testimony borne by the clinical observation is not always as explicit and satisfactory as could be wished), still we maintain that by thus allowing *one* of the functions of a very sizable portion of the cortex (the power to initiate simple fundamental movements) to stand as its representative function, an important source of error is introduced into the discussion.

Have, then, these movements any peculiarity which stamps them as of volitional type? It is easy to reason that, since all thought is made up of motor and sensitive elements, and since it must be in the cortex cerebri as the supreme ganglionic centre that these component elements of thought are constructed, therefore all manifestations of activity which we get from acting on the cortex in the physiological laboratory must be such as, occurring in the life of the individual, were characteristic of his conscious existence. This reasoning is not distinctly gone through, we repeat, only implied, and it is indeed now generally believed that the cortex cerebri has to do with secretion, nutrition, vaso-motor action, and perhaps all the processes of vegetative life. Still, the implication, even, that the simple muscular movements which we get by applying electricity to the cortex cerebri are of a volitional type deserves, in the interests of psychology, to be met and questioned.

If such were the case, how should we explain the fact that it is found to be impossible, experimentally, to excite any play of motions such as might suggest, in the faintest degree, by their variety or number, the voluntary movements of a healthy animal? The first inclination is to suppose that this small and invariable circle of movements represents the average, so to speak, of the infinite number which each centre may take part in producing, in the sense in which Dr. Hughlings Jackson speaks of the tonic spasms of epilepsy as being made up of a great number of coördinated movements of high order "jammed together" so as to be individually indistinguishable. It is plain, however, that this analogy cannot be applied exactly to the case of experimental excitations of the cortex, since we see here no evidence of a conflict of muscular contractions, but orderly, unembarrassed, though not very complex motions, which recur always under essentially the same form. It may be that the reason we always get these particular movements, instead of any one of a large number, is that, in virtue of the frequency with which, physiologically, they occur, the processes underlying them come to have a greater susceptibility to excitations than the processes underlying other movements less frequently performed. But it must be remembered that this very fact would constitute a reason for classifying these processes among the (relatively) non-volitional.

In the second place, we know far too little of the anatomy and physiology of the cortex cerebri to regard it as being, *as a whole*, a volitional ganglionic centre, or as a single centre, at all. For all we can tell, the different layers of

the cortex may have functions almost, if not quite, as distinct from each other as are those of the thalamus opticus and the corpus striatum.

In the third place, the evidence that we should regard as essential to prove a movement to be of volitional or psychical type, namely, the fact of its association with other psychical events, such as sensations or other movements, we get in these experiments, somewhat, it is true (at least in the case of excitation of the sensory centres), but only very sparingly.

We do not mean to deny that *lesions* of the cortex in the neighborhoods indicated cause what might be called psycho-motor paralyses, as in aphasia, for example, but we maintain that in these pathological lesions parts are injured and connections severed of whose functions the electrical-irritation experiments of Hitzig and Ferrier, brilliant as they are, have taught us really but little.

The purpose of this criticism is not to detract from the importance of these experiments, but to show how they might, by this very brilliancy, lead physiologists to be content with but partial results, in other words, to object to the *implied* opinion that in obtaining certain coördinated muscular contractions by excitation of definite points of the cortex, we obtain more than a faint suggestion of the essential function of the part.

The relation between the motor and the sensitive functions of the cortex cerebri might perhaps be symbolized to advantage by comparing them, *regarded from the physiological stand-point*, to two oblique cones, having a common base and diverging apices.

That portion of each cone which is common to both would represent the (psychological) region within which motion and sensation resign, in a measure, their individual characteristics to unite as the basis of thought.

The apex of the motor cone might represent the functions of the "motor centres" of Hitzig and Ferrier. But the essential and more numerous functions of the cortex, even that part anatomically included within these "centres," would be represented by the overlapping part of the cone, and the evidence is as yet very incomplete that the functions of this part can be studied through electrical excitation.

The recent valuable researches of Professor Munk of Berlin at once forestall and fortify this criticism in a measure.

According to them the so-called "motor region" of the cortex cerebri should rather be regarded as a region given up mainly to tactile perception, the movements being excited only indirectly, though, no doubt, through the medium of defined and specialized association-tracts.

While we take the liberty to doubt, on psychological grounds, the propriety of defining the functions of this — or perhaps of any — part of the cortex as purely sensory, it must be admitted that the views advanced by Munk are more broadly scientific than those of the ultra "localizationists," and so, perhaps, are also the views of those who hold, with Schiff, that the "motor-region" is the seat of the muscular sense. J. J. P.

GEORGE B. WOOD, M. D., LL. D.

Professor George B. Wood, whose name for more than half a century has been connected with medical teaching and medical literature, died on the 30th of March, 1879, at his residence in Philadelphia, having just completed his eighty-second year. A native of Greenwich, New Jersey, he was educated at the University of Pennsylvania, from which he received his medical degree in 1818. Four years later he became professor of chemistry in the Philadelphia College of Pharmacy, and in 1821 took the chair of materia medica in the same institution, which he resigned in 1835 to accept the same branch in the medical department of the University of Pennsylvania. In 1850, having been continuously connected with the latter institution in the position mentioned, he was elected professor of the theory and practice of medicine in the same school, and upon his resigning, in 1860, he was unanimously appointed emeritus professor of the theory and practice of medicine. In 1863 he was made a member of the board of trustees of the university, and in 1865 he instituted and endowed the summer school with an auxiliary faculty,[1] authorized to confer the degree of doctor of philosophy.

He was physician to the Pennsylvania Ho-pital for twenty-four years (1835–59), and was a member of the faculty of the University of Pennsylvania for about the same period. At the time of his death he was president of the College of Physicians of Philadelphia, and president of the American Philosophical Society. He was a member of a number of other societies, and had been president of the American Medical Association. During the last four years he had been an invalid and confined to his house, the last two years being unable to leave his couch.

The industry and zeal of Dr. Wood were such as to lead him, in former years, to contribute frequently to medical literature, but his reputation as a writer is chiefly based upon his Treatise on Practice, published in 1847, which ran through six editions, the last being in 1867. Previous to this work, however, he had, with the late Dr. Bache, compiled the Dispensatory of the United States, which first appeared in 1833, and is still extant, thirteen editions having been published. He also wrote a Treatise on Therapeutics and Pharmacology or Materia Medica (Philadelphia, 1856), and a number of addresses, including a short History of the Pennsylvania Hospital and one of the University of Pennsylvania.

The career of Professor Wood exemplifies in a striking manner the legitimate results of honest, earnest, persevering endeavor when associated with uprightness of character and unwavering integrity. Until the last, he preserved a warm interest in medical education, and by his death the University of Pennsylvania loses a warm and unselfish friend, and the profession of Philadelphia one of its brightest ornaments. He lived to see the maturity of many of his plans, and to enjoy the reward of his devotion to his chosen profession and to humanity.

[1] The following were the chairs occupied in the summer school: (1) zoölogy and comparative anatomy, (2) botany, (3) geology and mineralogy, (4) hygiene, and (5) medical jurisprudence.

YELLOW FEVER ON THE PLYMOUTH.

The bill authorizing the expenditure of two hundred thousand dollars in the construction of a steel refrigerating ship, according to the plan proposed by Professor Gamgee, passed the senate after some discussion, and so modified as to make its construction subject to the recommendations of the National Board of Health. Professor Gamgee proposes this as a steam vessel, to be used at the quarantine of such ports as may be recommended, to disinfect vessels and cargoes from ports suspected of infection with yellow fever and other contagious diseases. During the discussion a communication was read from Drs. Turner, Billings, and Hamilton, to the effect that the apparatus will give a probable temperature of zero F. to affect an empty ship throughout, but that it will probably almost always be necessary to discharge the cargo first; that the assumption that this temperature of a few hours' duration will destroy or render permanently harmless the yellow-fever poison has no facts as yet to sustain it; and that the project is an experiment worthy of trial.

The recent outbreak of yellow fever on board the United States ship Plymouth will render this proposition of Professor Gamgee's peculiarly interesting, and retard legislation upon his bill in the house of representatives until a full report has been made by the secretary of the navy. Upon the facts in the case, as called for by the house, resolution passed April 8th. The secretary has appointed Drs. Wm. T. Hord, Richard C. Dean, and Thos. W. Leach as a board to make a thorough investigation and report. The surgeon-general of the United States navy has furnished to the surgeon-general of the marine hospital service the following facts: —

On November 7th last four cases of yellow fever occurred on board the vessel while lying in the harbor of Santa Cruz; these were removed to the hospital on shore, and the ship sailed for Norfolk. Three mild cases occurred during the voyage, and the Plymouth was ordered to Portsmouth, N. H.; thence to Boston. At the latter port everything was removed from the ship, and all parts of the interior were freely exposed to a temperature which frequently fell below zero, the exposure continuing for more than a month. During this time the water in the tanks, bilges, and in vessels placed in the store-rooms was frozen. One hundred pounds of sulphur was burned below decks, this fumigation continuing for two days, and the berth decks, holds, and store-rooms were thoroughly whitewashed. On March 15th the ship sailed from Boston southward; on the 19th, during a severe gale, the hatches had to be battened down and the berth deck became very close and damp. On the 23d two men showed decided symptoms of yellow fever, and on the recommendation of the surgeon the vessel was headed northward. The sick men were isolated, and measures adopted for improving the hygienic condition of the vessel and crew. The surgeon reported that he believed the infection to be confined to the hull of the ship, especially to the unsound wood about the berth deck, all the cases but one having occurred within a limited area; and that while the Plymouth is in good sanitary condition for service in temperate climates, should she be sent to a tropical station, probably no precautionary measures whatever would avail to prevent an outbreak of yellow fever.

POLITICAL EXPEDIENCY.

The bill to consolidate the boards of health, lunacy, and charity has passed to its third reading. If the bill becomes a law, this means the virtual abolishment of the present Board of Health for political reasons, the republican party making this change in the name of retrenchment, but in reality as a campaign measure against the Butler faction. It is uncertain whether the present members of the board will be renominated by the governor, or that they will accept any such nomination. It is reported as probable that the consolidated board will have at least two female members. The valuable work which has been done by the present Board of Health and the influence it has exerted in improving sanitary legislation throughout the country are too well known to need any praise from us. It must be looked upon as a great misfortune that the usefulness of this organization should in any way be tampered with.

THE WALKING MANIA.

One of the saddest evidences of the difficulty in obtaining a livelihood at the present time is shown in the readiness with which dangerous occupations are embraced by a crowd of eager applicants when there is an opportunity to make money. We called attention to this fact some time since in commenting upon the death of a poor girl accidentally killed in a shooting exhibition upon the stage. The walking mania affords a more recent example. The exhibition of women pedestrians in New York was a ghastly caricature of the form of entertainment. The sufferings of these poor creatures in their efforts to obtain a share of the proceeds were apparently the chief point of interest to the spectators. The quarter-mile walk bases its success as a show on the amount of exhaustion it is capable of producing. In a recent six days' walk in Louisville it is stated that one of the contestants, a man, at the close of the match "was completely worn out," and, after languishing for a few days, died. We are glad to say that under the careful police supervision of this city such entertainments are not likely to take place here.

MEDICAL NOTES.

— Mathieu, the old and well-known instrument maker of Paris, is dead. — Professor Nussbaum, of Munich, has just performed his two hundredth ovariotomy. — Professor Michel, of Erlangen, has been called to Wurzburg. His former chair has since been taken by Professor Sattler, heretofore of Giessen. — Hyrtl has just published a work on anatomical terms which have been derived from the Arabic and Hebraic languages. The Vienna *Allgemeine medizinische Zeitung*, in commenting upon the exceeding interest of the work, expresses the greatest regret that a man of Hyrtl's genius could have withdrawn so prematurely from his professorship. — Professor Sonnenschein, one of the most accomplished chemists of Prussia, is dead. — Erichsen has

been nominated as president of the Royal Medical and Chirurgical Society. — Dr. Hermann Köhler, professor of pharmacology in the University of Halle and author of the Handbook of Physiological Therapeutics and Materia Medica, died of heart disease February 6th. He is not to be confounded with Reinhold Köhler, professor of clinical medicine at Tübingen and author of the excellent Handbook on Therapeutics. — Tyndall has contributed one thousand marks to the monument to the late Robert von Mayer, of the University of Tübingen.

— At Greenock, Scotland, an "articulation school for deaf and deaf-mutes" has been established under the auspices of Prof. Graham Bell, formerly connected with the Boston School of Oratory, and an assistant teacher has been sent out from the latter institution. The system is extremely interesting, consisting of articulation and lip-reading, which of course are taught through the eye of the pupil, and may be studied at the Boston school, at which visitors are always welcomed.

— Gibout, in *L'Année médicale*, gives such simple treatment for the universal torture — corns — that it should become familiar. He first softens the corn by applying to it for one night an ointment consisting of turpentine and acetate of copper each one part, white resin two parts, and yellow wax four. The corn should afterward be excised, care being taken to go deep enough to remove its summit, which of course is the portion deepest in the flesh. After excision the matrix should be cauterized with sulphuric acid, else the corn will reappear.

— The *London Lancet* severely denounces the "heathen practice" of burning the dead, chiefly because by destroying all traces of poison and internal injury it would encourage crime.

CHICAGO.

— Now that a democratic mayor has been elected, and the first change in the political complexion of the city government that has occurred for many years is about to be inaugurated, the future of the department of health is being canvassed by both the people at large and the profession. A petition is in circulation among citizens which is being extensively signed, praying the mayor-elect not to disturb Dr. De Wolfe in his office of commissioner of health. The claim is made with great unanimity among all classes that the department of health should be kept out of politics, and conducted in the interest solely of science and the health of the people. While some people, both in and out of the profession, oppose the present commissioner, the great majority think he has given the city the most thorough and efficient health department we have ever had. His administration has certainly been a warfare upon the "stinks" of fertilizing establishments, and it is no wonder owners of such oppose his retention in office.

Mayor-elect Harrison gives, so far, evidence of broad views and a high public spirit; he says the police and fire departments shall not be disturbed by political influences; he is silent on the subject of the health department. Meanwhile the scramble for office is kept up with the vigor usually incident to a change of administration in a large city.

WASHINGTON.

— The final confirmation by the senate of Drs. Smith and Verdi as members of the National Board of Health enabled that body to hold a full meeting, with all its members present, excepting Dr. Bowditch, on April 2d, which resulted in the following election of officers: Dr. Jas. L. Cabell, president, Dr. J. S. Billings, vice-president; Dr. T. J. Turner, secretary; executive committee: Drs. Cabell, Billings, Turner, Smith, and Bailhache. The meetings were held continually for four days, when the board adjourned to meet May 1st at Atlanta, Ga. During their session they decided to appoint a commission to investigate personally the yellow fever in Cuba, and to act at an early date. They also agreed upon the provisions of a bill to promote the public health, and to prevent the introduction of contagious and infectious diseases, providing for a rigid quarantine, etc.; this bill being referred to the senate committee will probably receive discussion and modification before its final adoption, and its provisions have not yet been published.

— Senate bill No. 267, authorizing the National Board of Health to investigate and report upon infectious and contagious diseases in food animals, has been referred to the committee on agriculture, and no report has yet been made upon it.

— Senate bill 284 authorizes Wm. J. Wilson, assistant surgeon United States army, to receive from the Khedive of Egypt a decoration for gallantry in battle in the action near Gara, Abyssinia, March 7, 1876.

LETTER FROM ST. LOUIS.

Taxation of Physicians. — Prostitution. — Medical Education. — Arsenic in Tetanus.

Mr. Editor, — One of the subjects that, during the past winter, has interested the medical fraternity in St. Louis has been an ordinance imposing a tax of twenty-five dollars a year, irrespective of income, upon the physicians practicing in the city. Meetings were held expostulating with the council, and petitions were addressed to the state legislature asking that they should interfere to prevent the enforcement or passage of such an ordinance. The ordinance was opposed by the profession on the ground that it was unjust to tax an occupation which included so large a proportion of charity work, and which by its charity saved the city so much expense. It was also opposed by some upon the ground that it was a tax upon brains. These arguments had no weight with the enlightened members of our city council; they held that the privilege of practicing medicine in St. Louis was worth twenty-five dollars a year. The state legislature, however, has passed a law prohibiting any city or town in Missouri from enacting any ordinance levying a yearly tax upon the professions of law, medicine, the ministry, or teaching. A protest has been made by the city authorities, claiming that the legislature has no right to make such a law, and that by so doing it infringes upon the rights of the city. Whether this objection is valid or not remains to be seen.

Yesterday a number of amendments to our city charter were submitted to

the people; among them was one for the regulation of houses of prostitution and assignation. It was couched in language which was suggestive only of good, but the idea prevailed that it was a wolf in sheep's clothing, and that regulate meant license. Only about one twelfth of the voters voted, but the result was 4700 for to 7000 against. It is to be hoped that some active measures will be taken against this vice or crime, whichever one may choose to call it. It is thought by many who are qualified to judge that our present laws are ample, and that the fault has been not with the laws but with those who executed them; for from the repeal of our social evil law until a few months ago there seems to have been no effort to suppress prostitution in this city.

The regular medical colleges have just held their commencement exercises, the Missouri College graduating eighty-seven and the St. Louis College fifty-eight students. The valedictory address to the graduates of the St. Louis Medical College was made by Dr. E. H. Gregory. That to the graduates of the Missouri Medical College was made by Dr. P. G. Robinson.

The three years' course of study is rapidly gaining popularity here; thirteen of the graduates of the St. Louis Medical College had taken the three years' course, which amounts to about nine months of actual attendance every year in that institution. At the end of the first year they have written examinations in chemistry and anatomy, at the end of the second in materia medica and physiology, and at the end of the third in the remaining studies; this course also includes a compulsory course of practical analytical chemistry in the laboratory. The favor with which this is received is evinced by the fact that during the first and second days that the books were open for matriculation between forty and fifty students gave in their names for the three years' course. This is a step in the right direction, and will undoubtedly tend to elevate the profession in the West.

At a recent meeting of our medical society Dr. J. T. Hodgen attracted the attention of its members to the treatment of tetanus by arsenic, a practice which he had followed for some years, and which had yielded better results in his hands than any other line of treatment. He begins with the usual dose, increasing it rapidly to as large an amount as the patient can bear.

The following are some of the cases treated in this manner, which were under his sole charge, or were seen by him in consultation: Case I. G. S., aged fifteen years. Contused wound of scalp. Trismus and opisthotonos. Spasms recurred frequently during a period of three weeks. Fowler's solution in five-drop doses every two hours. Over two ounces were taken. Recovery. Drs. A. S. Barnes and J. T. Hodgen. Case II. Boy, fourteen years old. Wound from nail in boot. Cauterized the wound freely; after trismus was present to a marked degree began the use of Fowler's solution in large doses. Recovery. Case III. C. C., seventeen years old. Trifling wound of knee. Trismus and opisthotonos. Chloral had been given, then Fowler's solution. He was removed to the City Hospital, and the arsenic continued. Recovery. Drs. Frazier and Hodgen. Case IV. Boy. Scald of both legs. Fowler's solution and chloral. Recovery. Drs. Fairbrother and Hodgen. Case V. J. D., forty years old. Fracture of left thigh, first and fourth metatarsal bones of left foot and left clavicle, with scalp wound. Trismus. Third day began to

take Fowler's solution; no other medicine was administered. Recovery. Case VI. Boy, fifteen years old. Gunshot wound of left arm. Extreme opisthotonos and trismus. Arsenic. Recovery. Drs. Mudd and Green. Case VII. Man, thirty years old. Finger cut by a saw. Trismus; not a severe case. Arsenic was administered, and the case resulted in recovery. Dr. Mudd.

These are some of the cases treated by arsenic. All traumatic; all resulted in recovery. There have been, of course, fatal cases where arsenic has been used, but death has always occurred in the first thirty-six hours.

SHORT COMMUNICATIONS.

DR. WILLIAM F. STEVENS.

At a meeting of the Middlesex East District Medical Society, held at Woburn, April 2, 1879, the committee appointed to prepare proper resolutions on the death of the late Dr. William F. Stevens, of Stoneham, presented the following, which the society voted to accept, and authorized the secretary to send a copy to Mrs. Stevens, and to the Boston Medical and Surgical Journal for publication: —

To Mrs. Dr. William F. Stevens, Stoneham, Mass.

Dear Friend, — The members of the Middlesex East District Society, along with many others, wish to condole with you in the great loss we have recently sustained in the death of Dr. Stevens. To the younger members of this society he was specially endeared by numerous acts of kindness and professional courtesy, and by all of us the loss will be severely felt in the future.

As physicians, we desire to put on record the opinion that no one ever surpassed him in a due regard for the rights of his fellow practitioners. His was indeed the soul of honor, "without fear and without reproach," who scorned to take an unfair advantage of a rival practitioner, and studied to save the feelings of others even at the sacrifice of his own.

We desire also to record our admiration of his great skill and remarkable fidelity to duty — a fidelity which knew neither rich nor poor, but only suffering humanity.

Nor will we soon forget the moral beauty of his character, which reflected its lustre on the profession to which we are proud to belong. It shall be our duty and privilege to "keep his memory green," — an example for all time of what a good physician should be.

A true copy, attest: J. Richmond Barss, *Secretary.*

BLOOD-CELL COUNTING.

Mr. Editor, — I hope you will allow me to suggest to your readers some points in reference to instruments for blood counting, as some misapprehension may arise from a hasty reading of the article by Drs. Henry and Nancrede contained in the Journal for April 10th. In the Malassez and Gowers patterns of instruments for blood counting it is proper to admit the existence, first, of errors of instrument, which affect comparative results. These may be unequal depth of cell or want of uniformity in the calibre of the capillary tube used as a cell, unequal ruling of lines, and also want of uniformity of the surface of their covering glasses. Second, of errors of method in the practical use of these instruments, which affect comparative results; these may arise from those errors which occur in experiments upon a single specimen of blood. The only important errors of this kind occur from an imperfect cleaning of the blood pipette; from the fact that the lumen of the tube may contain moisture, and that all the blood has not been blown from the blood pipette into the artificial serum; also, as stated by these writers, from gravitation of corpuscles contained in a drop too large for the cell.

The errors of the first class are those which in a well-made instrument are so trifling that they may be disregarded; those of the second are not so easy to avoid or calculate, but with

great care in manipulation it is fair, from experience, to place them within five per cent. The errors noted by Drs. Henry and Nancrede need not be insisted upon too strongly, because they can be avoided by great care and experience in manipulation.

Having, then, by careful experiments on standard solutions of blood discovered the error of the instrument and its method of practical use, we have a definite starting-point, and ground upon which to base the circumstances which may govern or cause any variations which are greater than this error. In the case of my experiments, reported in your number of April 3d, I found that this error did not exceed five per cent. I do not lose sight of the fact that there are circumstances in the individual upon whom the experiment is made which may affect the deductions as to the degree of corpuscular richness of blood. By calculating the errors of the instrument and method of using it, careful experiment will determine these circumstances.

For the information of your readers who may be desirous of making a series of experiments to differentiate their results, I will add that the image of the corpuscles and ruled lines in Gowers's apparatus may be projected by means of a camera lucida eye-piece upon a white screen; in this way the corpuscles may be pricked out and enumerated.

ROBERT AMORY.

LONGWOOD, *April* 11, 1879.

A CASE OF PULMONARY THROMBOSIS.[1]

BY E. CHENERY, M. D.

I REPORT the following as a case of pulmonary thrombosis, not because I can certainly demonstrate that the obstructing clot originated in the lungs, where it did its mischief, but because it was an infarction of vessels belonging to the right half of the circulation. Indeed, my impression is that the clot started from the neighborhood of the uterus, and came up through the inferior vena cava, at last lodging in the trifurcation of the right pulmonary artery, where it afterwards augmented in size till it produced complete obstruction to the bronchus of that vessel. But in saying this I am not unaware that Juergensen teaches that "pulmonary infarctus is not to be thought of unless undoubted sources for the production of the embolism be demonstrated." This case is interesting as illustrating how the accident, so to speak, presents itself unawares, and might be mistaken, as it doubtless has been, for collapse.

I was sent for on the morning of January 4th to see a maiden lady aged twenty-nine, who had enjoyed excellent health, rarely having been sick, and not at all recently. Two days before, as she was getting over her catamenia, she took a sudden cold, and had not since been out. I found her in bed, with flushed face and slight cough. She had headache, a pulse of 120, and respiration 34. I thought at first sight that she had pneumonia. There were no abnormal heart sounds; percussion was a little dull over the right back, but there was no crepitation, and the case was regarded as one of congestion of the lungs, with threatened pneumonia. She received a portion of sulphate of magnesia and aconite. The next day she seemed much better; the cough was gone and the dullness diminished, while the pulse had fallen to 100 and the respiration to about 26. She now complained of pain and tenderness in the region of the uterus. The next day she was much the same, only the tenderness had extended higher up, giving me to fear that I was to have a case of pelvic peritonitis. Warm applications with turpentine were directed to be employed over the abdomen, and liquor ammoniæ acetatis was given. During the night she seemed worse, had diarrhœa, and did not sleep. At 5.30 the next morning she felt a sharp, cramp-like pain in the left side in the region of the heart, which began to beat heavily. She became oppressed for breath, the lips turned blue, the skin growing cold, and profuse perspiration starting out at every pore. When I saw her at nine A. M., her whole surface was cold, and yet not so to herself, and the clothes next to her were saturated with the abundant sweat. Auscultation showed the air entering into all parts of the lungs. There was no pulse at the wrist, and apparently but little action on the left side of the heart, while the right was laboriously at work, with unusual impetus against the ribs and sternum, and loud sounds of the valves. Nothing could be plainer than the great disproportion in the action of the two sides of the

[1] Read before the Suffolk District Medical Society, January 25, 1879.

heart, with sounds extending further to the right than to the left. There was no cough nor bloody expectoration. Her voice was reduced to a whisper, but her intellect remained clear. At five P. M., Dr. J. H. Warren saw her with me, and judged in the case as I did. The temperature under her tongue at this time was 99.50° F. Her friends and herself were informed of the nature of the case, and what would most likely be the result. She grew gradually worse, more and more cyanotic, short of breath, and weak, and died at midnight, eighteen and a half hours after the first symptoms of danger. It is not to be assumed that the pain originated on the instant the local infarction began, but only when the obstruction to the circulation became sufficient to be embarrassing to the heart. That the obstruction was not in the right heart itself is plain from the clear though loud sound of the valves, nor was there any evidence of regurgitation, as there would have been had the valves been tied down. It is equally plain that the blood did not return to the left heart except in partial amount; hence its collapsed and inactive condition, as also that of the arteries and capillaries of the systemic circulation. Hence, also, the profuse sweating. The prominent symptoms about the heart were clearly brought out in an experiment on a dog, a few days later, when, having him under ether and his abdomen laid open, the diaphragm was punctured, allowing of collapse of the left lung, with obstruction, of course, to the left pulmonary circulation; then quickly raising the chest wall the heart was brought into full view and handled. As the obstruction to the circulation in the lung came on the right heart enlarged, and put forth unusual effort to overcome the hindrance, while the left heart became shrunken and ineffectual in its efforts to supply the aorta, which also fell into collapse. By reason of the engorged right side the heart was drawn towards the right, and its impulse was carried further in that direction and in front than normal, with a corresponding recession from the left, both as to impact and valvular sounds. Thus what was here seen was in perfect accord with what was felt and heard in the case of my patient.

In September, 1875, a case of double thrombosis came under observation, in a lady forty-six years of age, the clots forming three hours from each other, and arising, without doubt, from blood-stasis, as she had been sick for some time with malignant right ovary. After the first attack, which occurred at three A. M., I saw her. Her symptoms were then precisely like the case I have detailed. Warmth, friction, and stimulants changed the character of the surface a little, and rendered her somewhat more comfortable for a time, when I left her. At six o'clock another attack occurred, and she almost immediately expired, her face being almost as cyanotic as if she had been hanged.

Dr. R. H. Fitz kindly conducted the autopsy for me. According to the general fact, the right lung had the older clot, being the one usually obstructed when only one is involved. The clot dipped into the three branches of the artery. On the left was a similar clot lodged in the bifurcation, more recent than the former, but distinct in character from the post-mortem coagula. The age of the two clots doubtless corresponded with the two seizures.

Notwithstanding Bristowe teaches that "the symptoms of pulmonic obstruction are by no means typical," we feel that, with the above facts before us, we are on safe ground for concluding that the case of our late patient was a case of pulmonary obstruction, probably of the right side, from a clot either originating on the spot or brought there from a distance.

ELASTIC CAUSTIC PENCILS OR BOUGIES.

BY WILLIAM A. BYRD, M. D., QUINCY, ILL.

In the JOURNAL for March 20, 1879, page 405, appears: "Dr. Pajot prepares an elastic pencil of caustic by dipping a laminaria tent, diameter two millimetres, into a rather thick mucilage, and afterward rolling it in finely pulverized nitrate of silver; when dry it forms an elastic pencil which may be readily introduced into the uterine or other cavity without fear of fracture."

The first article I ever contributed to a medical journal was to the *St. Louis Medical Reporter* in 1867 or 1868, describing the treatment of a case of prostatitis by means of slippery-elm-bark bougies dipped in a saturated solution of nitrate of silver and allowed to remain until thoroughly impregnated with the solution; then taken out, dried, and passed down the urethra to the affected spot, and allowed to remain until the nitrate had exerted its cauteriz-

ing effect. Since then I have used the medicated bougies or "caustic pencils" frequently, especially in the treatment of suppurating chronic sinuses and granular erosion of the cervix uteri. Some time in 1868 I commenced preparing the bougies or "pencils" by placing them with their ends in water until well coated with mucilage, and then rolling them in finely powdered sulphate of zinc, then allowing them to dry, when they would be ready for use by simply moistening and inserting into the cavity intended for treatment. Other caustics may be used the same way. The slippery-elm-bark pencils can be easily and quickly made by any one, of any desired length or thickness, very much cheaper than laminaria. They furnish their own mucilage, can be had on short notice in country localities, and by leaving them in the cavities being treated they swell up by imbibing moisture, and produce, as does laminaria, "over-distention," which is a great adjuvant to their cauterizing propery.

REPORTED MORTALITY FOR THE WEEK ENDING APRIL 5, 1879.

Cities	Population estimated for July, 1879.	Reported Deaths in each.	Annual Death-Rate per 1000 during the Week.	Percentage of total Deaths from				
				The Principal "Zymotic" Diseases.	Pneumonia.	Diphtheria and Croup.	Scarlet Fever.	Diarrhœal Diseases.
New York	1,085,000	534	25.66	17.97	14.23	4.12	7.86	2.43
Philadelphia	—	286	—	12.90	8.04	3.84	3.49	0.35
Brooklyn	564,400	238	21.98	13.85	15.55	4.20	6.30	1.26
Chicago	—	138	—	28.98	6.52	8.69	8.69	0.73
St. Louis	—	97	—	5.15	17.53	—	—	—
Baltimore	365,000	139	19.86	12.95	8.63	5.04	4.32	—
Boston	360,000	127	18.39	18.11	11.81	10.23	1.58	4.74
Cincinnati	—	104	—	31.73	8.65	3.84	20.19	—
District of Columbia	160,000	72	23.46	11.11	11.11	4.17	2.78	—
Cleveland	—	51	—	13.73	11.76	11.76	—	—
Pittsburgh	—	30	—	—[1]	—[1]	6.66	—	—
Milwaukee	—	38	—	15.79	10.53	15.79	—	—
Providence	101,000	27	13.93	25.93	11.11	7.41	7.41	—
New Haven	60,000	19	16.50	5.26	10.52	5.26	—	—
Charleston	57,000	27	24.71	14.82	3.71	3.71	—	3.71
Nashville	—	11	—	18.18	9.09	—	—	9.09
Lowell	53,300	15	14.67	6.67	20.00	—	—	—
Worcester	52,500	20	19.86	15.00	5.00	—	—	—
Cambridge	51,400	7	7.10	14.29	14.29	14.29	—	—
Fall River	48,500	16	17.20	12.50	—	—	12.50	—
Lawrence	38,200	17	23.21	29.41	—	23.53	—	—
Lynn	34,000	13	19.94	23.08	7.69	—	15.39	—
Springfield	31,500	11	18.21	18.18	—	18.18	—	—
New Bedford	27,000	16	30.90	6.25	18.75	—	—	—
Salem	26,400	9	17.78	—	—	—	—	—
Somerville	23,350	6	13.40	—	16.67	—	—	—
Chelsea	20,800	7	17.55	—	14.29	—	—	—
Taunton	20,200	9	23.23	22.22	11.11	—	11.11	—
Holyoke	18,200	6	17.19	—	50.50	—	—	—
Gloucester	17,100	4	12.20	—	50.00	—	—	—
Newton	17,100	—	—	—	—	—	—	—
Haverhill	15,300	4	13.63	—	25.00	—	—	—
Newburyport	13,500	6	23.17	—	16.67	—	—	—
Fitchburg	12,500	5	20.86	—	20.00	—	—	—
				—				

[1] Not reported.

As compared with the previous week, there is an increased mortality from cerebro-spinal meningitis and diarrhœal diseases; decreased from acute pulmonary diseases and whooping-cough; no other marked change. From *whooping-cough* 12 deaths were reported in New York, five in Philadelphia, three in Brooklyn and Cincinnati, one in Baltimore, Providence, and Taunton. From *typhoid fever*, five in Philadelphia, two in Chicago, St. Louis, and Cincinnati, one in New York, Baltimore, Boston, District of Columbia, Providence, Charleston, Lowell, Lawrence, and New Bedford. From *erysipelas*, six in Chicago, three in New York, Philadelphia, and Cincinnati, two in Brooklyn, St. Louis, and Worcester, one in Baltimore, District of Columbia, and Providence. From *cerebro-spinal meningitis*, seven in Chicago, two in New York and Philadelphia, one in St. Louis, Boston, District of Columbia, Charleston, Nashville, and Lynn. From *measles*, two in Baltimore, one in New York,

Cleveland, and Worcester. From *catarrhal*, *remittent*, and *nervous* fevers, each one in Baltimore. From *malarial* fever, one in St. Louis and Milwaukee. None from *small-pox*. Pulmonary diseases are prevalent in Louisville, scarlet fever and diphtheria in Buffalo, scarlet fever and pulmonary diseases in Richmond, fevers and pulmonary diseases in Savannah and New Orleans, diphtheria and pulmonary diseases in San Francisco. In eighteen of the nineteen cities of Massachusetts, the mortality from scarlet fever, whooping-cough, and erysipelas had diminished; from the other "zymotic" and from pulmonary diseases increased.

Sergeant Pursell's meteorological record for the week, in Boston, is as follows: —

Date.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.			Rainfall. (Melted Snow.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7 A. M.	2 P. M.	9 P. M.	Daily Mean.	7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.	Duration in Hours.	Amount in Inches.
March 30	29.390	42	51	34	100	58	74	77	N	W	NW	6	8	8	R	F	C	6.5	.27
" 31	29.124	29	39	24	70	100	100	90	N	N	NW	17	23	30	O	S	S	14.6	.27
April 1	29.144	36	45	24	77	39	46	54	NW	NW	W	31	28	24	O	F	C	—	.68
" 2	29.483	35	42	31	53	48	65	55	W	W	W	19	24	21	C		C	—	—
" 3	29.407	35	50	24	66	37	100	67	W	W	N	20	12	16	C	F	S	9.8	.14
" 4	29.662	25	30	19	86	47	48	60	W	W	W	17	20	13	F	F	F		.02
" 5	29.927	30	39	19	72	61	80	74	W	W	W	10	7	8	F	O	F	—	—

	Barometer.	Thermometer.	Humidity, Saturation being 100.	Wind.	Rain.
Weekly Summary.	Mean 29.448	Mean 33.5	Mean 68.4	Total miles traveled, 2883.	Total amt. .78 in.
	Max. 29.981	Max. 51	Max. 100		
	Min. 28.961	Min. 19	Min. 37	Prevailing direction, W.	Duration, 30 hrs. 55 min.
	Range 1.020	Range 32	Range 63		

Barometer corrected for temperature, elevation, and instrumental error.

Explanation of weather symbols: O., cloudy; C., clear; F., fair; G., fog; H., hazy; R., rain; S., snow or sleet; L. S., light snow; T., threatening.

Station: Latitude 42° 21′; longitude 71° 4′; height of instrument above the sea, 77.5.

A few cases of yellow fever are reported, and thought to be authentic, from the Mississippi Valley, where the various "investigations" under the government have not resulted in that improved sanitation to which attention should have been forcibly directed. The United States steamer Plymouth was fumigated and aired in a cold atmosphere after having had cases of yellow fever aboard. Upon returning to a warm latitude the fever broke out again, and the ship has been ordered to Portsmouth, where it is to be hoped that she will be disinfected.

For the week ending March 15th, in 149 German cities and towns, with an estimated population of 7,436,648, the death-rate was 27.2, an increase of 0.6 from the previous week. The mortality from typhoid fever was still increasing, and from diphtheria rising again; from the other infectious diseases, including typhus fever, it had diminished. Three thousand eight hundred and eighty-four deaths were reported: 574 from consumption, 498 from acute diseases of the respiratory organs, 147 from diarrhœal diseases, 181 from diphtheria and croup, 65 from whooping-cough, 62 from typhoid fever, 39 from scarlet fever, 32 from measles, 30 from puerperal fever, 13 from typhus fever, one from small-pox. The death-rates ranged from 17.5 in Darmstadt to 36.1 in Görlitz.

For the week ending March 22d, in the 20 English cities having an estimated population of 7,383,999, the death-rate was 28.3, an increase of 0.3 from the previous week, diseases of the respiratory organs continuing excessively fatal, and influenza prevailing: whooping-cough, measles, and scarlet fever were fatal in different cities; small-pox continued prevalent in London (as also in Dublin). The death-rates ranged from 18.6 in Portsmouth to 32.0 in Leeds. Four thousand deaths were reported: 705 from diseases of the respiratory organs, 176 from whooping-cough, 92 from scarlet fever, 51 from measles, 37 from fever, 34 from diarrhœa, 21 from diphtheria, 15 from small-pox (in London).

No new case or death from the plague in the Volga district had been reported from February 9th to March 21st, when one broke out in Wetlianka. At that time the sanitary cordon had been given up except in two small villages, but Wetlianka was still left under the supervision of a medical commission. The German experts recommend (1) sanitary supervision of all suspicious places for a considerable time; (2) maintenance of a sanitary cordon around every infected place until six weeks from the occurrence of the last case or death; (3) a ten-day quarantine against infected districts. Sanitary measures are carried out vigorously: many dwellings have been burned, cemeteries disinfected, etc., and the Russian troops returning home are subjected to most stringent regulations. Typhus fever is diminishing in St. Petersburg; some of the cases, however, still present unusual symptoms.

Obituary. — Dr. Isaac Hays died in Philadelphia on Monday morning. He has been long well known to the profession as the editor of *The American Journal of the Medical Sciences*, with which he has been connected from its commencement. He has not been in practice for many years, but in early life was an ophthalmologist. He succeeded in attaining the goal to which every editor aspires, namely, the production of the best medical journal on this continent.

American Medical Association. — For the accommodation of delegates and their families the Great Southern Mail and Kenniesaw Route has arranged to place on sale the 29th of April to the 4th of May, inclusive, tickets at reduced rates to Atlanta, Ga., and return, and good until the 20th of May. A Pullman sleeper for delegates from Philadelphia will be placed in position at Broad Street depot (P. W. and B. R. R.) at nine o'clock P. M., on the 29th of April, and at the same hour each evening during the sale of tickets, so that they may avoid loss of rest in waiting for the train, which leaves at one o'clock, A. M. At Washington an additional sleeper will be attached, which will afford ample accommodation. The varied, beautiful, and romantic scenery along this route is unequaled by that along any other running to the South. Traversing what were the battle-fields of Manassas and Bull Run, the train sweeps past the Peaks of Otter, courses through the Roanoke Valley, crosses the Blue Ridge and Alleghany Mountains, winds along the banks of the Tennessee River, and runs in full view of the picturesque mountain ranges of North Georgia, and delivers the passenger in Atlanta, the "Gate City of the South," in less than thirty hours from Washington.

The attention of delegates from Washington, and all points north and east thereof, is called to the requirements necessary to secure reduced rates: application must be made to Dr. W. B. Atkinson, permanent secretary of the American Medical Association, No. 1400 Pine Street, Philadelphia (inclosing stamp), who will furnish certificates, on presentation of which at the various points mentioned the tickets can be purchased to Atlanta and return.

Boston Society for Medical Observation. — A regular meeting of the society will be held on Monday evening next, April 21st, at eight o'clock, at the rooms of the Boston Medical Library Association, 19 Boylston Place. Reader, Dr. E. N. Whittier. Subject, Six Cases of Abdominal Tumor in Children. Fred. C. Shattuck, Secretary.

Books and Pamphlets Received. — Physiological Therapeutics. A New Theory. By Thomas W. Poole, M. D., M. C. P. S., Ont. Toronto: The Toronto News Company. 1879.

A Manual of Examination of the Eyes. By Dr. E. Landolt, Directeur-Adjoint of the Ophthalmological Laboratory at the Sorbonne, Paris. Translated by Swan M. Burnett, M. D., University of Georgetown. Revised and enlarged by the Author. Philadelphia: D. G. Brinton. 1879.

Report of Certain Medico-Legal Cases. By Thad. M. Stevens, M. D., Indianapolis, Ind. (Reprint.) St. Louis. 1879.

On the Permanent Removal of Hair by Electrolysis. By George Henry Fox, A. M., M. D., New York. (Reprint.) 1879.

The Difficulties and Dangers of Battey's Operation. By George J. Engelmann, M. D. (American Medical Association.) 1878.

An Address upon the Life and Character of Lunsford Pitts Yandell, M. D. By Richard O. Cowling, M. D. Louisville, Ky. 1879.